

WE CLAIM:

1 1. A tire comprising a crown, two sidewalls and two beads, a carcass
 2 reinforcement anchored in the two beads and a belt reinforcement, said belt
 3 reinforcement comprising at least two superposed reinforcing plies formed by cords
 4 parallel in each ply and criss-crossed from one ply to the other by forming angles (α , β)
 5 with the circumferential direction ranging between 10° and 70° , characterized in that,
 6 between said two superposed reinforcing plies, at least two rubber decoupling layers of
 7 different mechanical properties are placed axially adjacent, and in that each of said two
 8 rubber decoupling layers is in contact with the cords of said two superposed reinforcing
 9 plies.

1 2. A tire comprising a crown, two sidewalls and two beads, a carcass
 2 reinforcement anchored in the two beads and a belt reinforcement, said carcass
 3 reinforcement comprising at least one reinforcing ply made up of parallel cords forming
 4 an angles roughly equal to 90° with the circumferential direction and said belt
 5 reinforcement comprising at least one reinforcing ply made up of parallel cords forming
 6 angles α with the circumferential direction ranging between 10° and 70° , characterized in
 7 that, between said crown reinforcing ply and said carcass reinforcing ply, at least two
 8 rubber decoupling layers of different mechanical properties are placed axially adjacent,
 9 and in that each of said two rubber decoupling layers is in contact with the cords of said
 10 two superposed reinforcing plies.

1 3. A tire according to Claim 2, in which the belt reinforcement
2 consists of a reinforcing ply made up of parallel wires forming an angle α with the
3 circumferential direction ranging between 10° and 70° and of a reinforcing ply made up
4 of parallel cords oriented roughly circumferentially.

1 4. A tire according to one of Claims 1 to 3, in which each rubber
2 decoupling layer is made by a spiral winding of a rubbery compound section directly on
3 the cords of the radially inner reinforcing ply.

1 5. A tire according to one of Claims 1 or 2, in which a first
2 decoupling layer is placed between the center part of the said two superposed reinforcing
3 plies, and in which a second decoupling layer is placed on at least one side of the first
4 layer and extends at least as far as the corresponding lateral ends of the said two
5 superposed reinforcing plies.

1 6. A tire according to Claim 5, in which the ratio between the moduli
2 of elasticity of the second rubber decoupling layer and the first layer ranges between
3 0.05 and 0.8.

1 7. A tire according to Claim 5, in which the ratio between the moduli
2 of elasticity of the second rubber decoupling layer and the first layer ranges between
3 0.5 and 0.7.

1 8. A tire according to Claim 5, in which the second rubber decoupling
2 layer has a damping ratio $\tan \delta$ less than that of the first layer.

1 9. A tire according to Claim 8, in which the second rubber decoupling
2 layer has a damping ratio $\tan \delta$ below 0.08.

1 10. A tire according to Claim 5, in which the belt reinforcement
2 comprises, on the same side as the said second rubber decoupling layer, an additional
3 reinforcing ply of cords oriented in the circumferential direction and extending axially
4 like the said second rubber decoupling layer.

1 11. A tire according to Claim 10, in which the said additional
2 reinforcing ply is placed radially outside the two superposed reinforcing plies.

1 12. A tire according to Claim 10, in which the said additional
2 reinforcing ply is placed radially inside the two superposed reinforcing plies.

1 13. A tire according to Claim 10, in which the said additional
2 reinforcing ply is placed radially between the said two superposed reinforcing plies.

1 14. A tire according to Claim 5, in which the H/W aspect ratio is
2 greater than 0.55.

1 15. A tire according to Claim 5, in which the ratio between the moduli
2 of elasticity of the second rubber decoupling layer and the first layer ranges between
3 1.2 and 20.

1 16. A tire according to Claim 5, in which the ratio between the moduli
2 of elasticity of the second rubber decoupling layer and the first layer ranges between
3 1.5 and 10.

1 17. A tire according to Claim 15, in which the first rubber decoupling
2 layer has a damping ratio $\tan \delta$ below that of the second layer.

1 18. A tire according to Claim 17, in which the first rubber decoupling
2 layer has a damping ratio $\tan \delta$ below 0.08.

1 19. A tire according to Claim 15, in which the H/W aspect ratio is less
2 than 0.55.

1 20. A tire according to Claim 5, in which the zone of contact between
2 the cords of the crown reinforcing ply whose axial width is smallest and the second
3 rubber decoupling layer is axially greater than 5 mm.

1 21. A tire according to Claim 5, in which the zone of contact between
2 the cords of the crown reinforcing ply whose axial width is smallest and the second
3 rubber decoupling layer ranges axially between 20 mm and 1/3 the axial width of the said
4 crown reinforcing ply.

1 22. A tire according to Claim 5, in which the said second layers extend
2 axially more than 3 mm beyond the lateral ends of the cords of said crown reinforcing
3 plies.